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EFFECTIVENESS OF CAMPAIGNS
IN MINIMIZING
CONSUMER FOOD WASTE

A Report of Experiments Conducted in Elmira, New York,
and New Kensington, Pennsylvania, 1943

Office of Distribution
WAR FOOD ADMINISTRATION
in cooperation with the
Bureau of Agricultural Economics, United States Department
of Agriculture, and the Nutrition Committees of Elmira,
New York, and New Kensington, Pennsylvania

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Better utilization of food has been required because of its importance as a weapon of war. Both mandatory and voluntary programs have been developed to bring about changes in consumption habits. Rationing and other food regulatory programs have forced changes in food habits. Appeals for voluntary improvement in food conservation practices have probably had some effect but the degree of effectiveness is not known. Whenever consideration is given to a new appeal its usefulness has to be estimated, usually upon the basis of inadequate information. This study evaluates the effectiveness of two campaigns urging voluntary changes in food conservation practices.

SUMMARY

This study was designed to learn the effectiveness of two community campaigns in effecting changes in food-conservation practices. The campaigns were conducted in Elmira, New York, and New Kensington, Pennsylvania. It was expected that the study would afford suggestions and recommendations regarding similar campaigns.

Judging from comparisons of selected food-conservation practices, before and after the campaigns, the educational information was effective in reducing food waste both in quantity and in loss of vitamins and minerals. These before-and-after statistical comparisons are further supported by observations of persons who took part in the campaigns. The degree of participation by community leaders was relatively high and attitudes of

1/ This study was planned and completed jointly by Howard R. Cottam of the Office of Distribution, War Food Administration, and Walter C. McKain, and Douglas Ensminger, Bureau of Agricultural Economics, United States Department of Agriculture. The report was written by Howard R. Cottam with the assistance of E. L. Kirkpatrick, Arnold Green, Jane Woolley, and Miriam Sadagursky. The Elmira part of the experiment was jointly planned and executed by the two agencies; the New Kensington phase was carried out solely by the former agency. Nutrition committees of the two communities reviewed the experimental design before the campaigns and read this report. Miss Rosabel Burch and Miss Rose Cologne gave invaluable assistance in planning this study and reviewing the report.

consumers toward the campaigns were favorable. It is the opinion of informed observers that appropriate and effective promotional devices were employed. Interviews with housewives revealed that impersonal means of communication—the press and the radio—reached far more people than speeches, demonstrations, and personal visits. Several continuing community programs originated in the campaign.

Despite the apparent results of the changes in food practices, however, little real enthusiasm was exhibited by housewives for the instruction given them in food management. Most housewives apparently felt that they were already saving food. Rationing and shortages of certain foods had forced them to be conservative.

METHOD OF STUDY

To evaluate the effectiveness of the campaigns, actual food-conservation practices before and after the campaigns were ascertained by interviews in households selected to represent a cross-section of all classes in the city. In addition, the observations of selected participant observers were used to appraise the "success" of the campaigns. Indications of gross changes in food waste were found in garbage statistics for Elmira but comparable data were not available for New Kensington.

The campaigns that are appraised in this report were conducted by local nutrition committees. Consequently, the study was possible only by making advance arrangements with key persons for mobilization of promotional and organizational resources in the two communities.

Experimental measures selected

Two types of conservation practices selected for pre-campaign and post-campaign comparisons were chosen on the basis of their diagnostic qualities concerning promotional effectiveness. That is, practices were chosen which were likely to be sensitive to changes under proper promotional stimuli. As there was no precedent for making the selection, suggestions of various home economists were followed. Identical practices were used in both the pre-campaign and post-campaign interviews. Questions were also asked about the media which carried the campaign information to the post-campaign respondents. The specific practices and promotional media about which interrogations were made are presented later in this report. Sample interview record forms are attached.

Elmira, New York, and New Kensington, Pennsylvania, chosen

Selection of experimental communities was made upon the basis of the following criteria: (a) the existence of an active and interested local nutrition committee; (b) presence of efficient and cooperative media for dissemination of public information; (c) a functioning OCD block leader service organization; (d) a system of municipal garbage collection amenable to some quantitative analysis and (e) an industrial economy fairly typical of small cities in the Northeast Region. Elmira met these criteria better than any other community

in that region and was chosen for the experiment.^{2/} New Kensington was selected as a second experimental community largely because of fortuitous circumstances. Here a federally-sponsored nutrition program was already underway and the nutritionist-in-charge invited the agencies making the Elmira study to analyze a food conservation campaign which was to be conducted in New Kensington.

Elmira is a city of about 50,000 population. Most of the residents are middle class and native Americans. The community organizations are well established and no sharp social cleavages are apparent. Several industries and a college are located in the city. Elmira may be considered fairly representative of American cities of comparable size.

New Kensington, a city of about 25,000 population, is located in the larger Pittsburgh urban community. Although it has its own community organizations, the influence of the larger city is ever present. Many of the residents are of foreign extraction although only about 10 percent were born in foreign countries. Of 20 distinct foreign nationalities present, Polish and Italian are predominate. The existence of economic and social cleavages here make it difficult to develop projects which embrace all segments of the population.

Interviews made by local persons

The inquiries made before and after the campaign were conducted by local women employed for this purpose. These women knew the food problems facing housewives in their communities. Standardized interview instructions were given them, both orally and in writing. The interviewers wrote reports of their experiences based on standardized questions concerning information that could not be limited to itemized record forms. In both cities the Post-campaign interviews were made several weeks after the end of the campaigns.

Participant observers made appraisal

To supplement information obtained through consumer interviews, community leaders and participating professional observers reported on the extent to which the campaigns accomplished their purposes. From these sources of information integrated pictures of the campaigns and their results were obtained.

^{2/} Before Elmira was finally selected as the test city negotiations broke down in three larger cities. In one, local shortages of certain foods had developed and it was locally decided that the time was inappropriate for campaign against food waste. In another, conflict of local personalities ended tentative agreements. In a third, the local nutrition committee decided that their organization was too new to tackle such an ambitious project. This would seem to indicate that nation-wide campaigns that depend upon active cooperation of municipal nutrition committees cannot reasonably be expected to attain complete coverage.

Comparable pre-campaign and post-campaign respondents

Informants for the "before" and "after" interviews were selected in such a way that all segments of the city population were represented. For the pre-campaign interviews random samples of addresses were selected from city directories. For the post-campaign inquiries the interviewers were instructed to call at the dwelling unit nearest to the addresses of pre-campaign respondents. That is, the first dwelling unit in the direction in which the interviewer was traveling was visited. In Elmira, 286 housewives were interviewed before the campaign and 306 after; in New Kensington, 250 before and 218 after. In other words, interviews were conducted in about one of each 50 Elmira households and one of each 30 New Kensington households both before and after the campaign. 3/

As the effectiveness of the campaigns was to be measured by the differences in food-conservation practices of the "before" and the "after" respondents, it was imperative that the two sets be comparable. That the households visited before the campaign were very similar to those interviewed after the campaign is indicated in the comparisons shown in table 1.

Experimental method validated

Because wasting food is considered both unpatriotic and poor household management, it was expected that housewives might understate the extent to which they engaged in wasteful practices. Consequently, an effort was made to check the validity of responses to the questions asked in the experiment. Preliminary checks were made before the Elmira and New Kensington interviews by trying out and comparing different types of interrogation. Five skilled interviewers each visited four New York City housewives and, upon the basis of their experience, the experimental approach was devised.

To test further the validity of the approach, 60 "check" interviews were conducted by skilled interviewers in New Kensington at the time the 218 post-campaign experimental interviews were made. These "check-interview" respondents were selected at random in such a way that the experimental pre-campaign and post-campaign respondents would not be included. In the "check" interviews, housewives were asked how much food was wasted, whereas in the experimental pre-campaign and post-campaign interviews they were asked how often they followed specified conservation practices. A copy of the record form is attached to this report.

All 21 persons who assisted with the pre-campaign and post-campaign interviews reported that housewives made an earnest effort to report accurately concerning their food-conservation practices. The "check" interviews confirmed these opinions. Regardless of the approach or the degree of understanding that could be established between interviewer and respondent the amount of waste reported was small (see page 26 for a further discussion of the extent of waste). This evidence that housewives did not understate

3/ Numbers were assigned to all listings and the selection made by reference to L. H. C. Tippet's Random Sampling Numbers.

the extent of their food waste is inconclusive, but it does indicate that the responses were relatively valid. Whatever bias existed was present in both the pre-campaign and the post-campaign interviews, so, the differences in practices before and after the campaigns may be considered results of the promotion rather than differences in understatements of wasteful practices.

THE CAMPAIGN

The Elmira and New Kensington campaigns were both conducted during September 1943. In the former city the "Fight Food Waste Campaign" was launched September 19 and terminated September 30; in New Kensington the "Food Conservation Campaign" started September 13 and ended September 24.

Sponsored by local committees

In both experimental communities the sponsorship and management of the campaigns was by local nutrition committees but a nutritionist of the Food Distribution Administration gave technical assistance in planning the campaigns and in preparing the informational material. 4/

Leadership for the Elmira campaign was assumed by the Chemung County Nutrition Committee which functioned under the New York State War Food Emergency Council. This committee worked under the technical leadership of a County Home Demonstration Agent of the State Extension Service. The nutrition committee appointed a promotion chairman, an exhibit chairman, a community program chairman, and a city program chairman to manage the campaign. It announced that the "Fight Food Waste" drive would be "an educational food and nutrition campaign to help prevent a critical food shortage during the war emergency." It adopted the slogan "Be a Kitchen Commando—Fight Food Waste in the Home." Here an informational program was outlined which would attempt to reach every housewife in the community through a variety of media. Although the campaign was to continue in full force for only a definite period, it was felt that food-conservation programs should extend throughout the year as a vital part of the war effort.

To conduct the New Kensington campaign the nutrition committee appointed a leading local woman as chairman of the campaign and designated a sub-committee of the nutrition committee to assist. Membership on the sub-committee included a nutritionist of the Food Distribution Administration who lived in the community and several local persons who were active in public office and industry. In this community, management of the campaign was complicated by the presence of "many fingers in the pie." An effort was made to keep most of the planning and management in the hands of local persons but the fact that this was a federally-sponsored experimental campaign rendered it difficult to do so completely. Mainly because too little time was allowed for planning, there was inadequate definition of responsibilities. A few unfortunate misunderstandings developed during the campaign but they did not by any means nullify it.

4/ The name of the Food Distribution Administration was changed to Office of Distribution on January 21, 1944.

Financed by local contributions.

In conducting the campaign in Elmira the nutrition committee spent approximately \$125 of funds appropriated for the campaign. This money was spent for printing campaign material including posters, postcards, stickers and pictures. The major expense was borne by the committee. Part of its expenditures were unintended, for it was expected that a large quantity of campaign material would be supplied without cost by the Food Distribution Administration but only part of the expected material was forthcoming.

In New Kensington, no funds were appropriated by the committee for conducting the campaign. Committee members, other than volunteers, generously contributed money, time, and the use of private automobiles, newspaper space, radio time, printing expenses, and various publicity materials.

Pledges and slogans adopted

"Be a Kitchen Commando-Fight Food Waste in the Home" was the slogan adopted by the Elmira committee. A pledge card was designed for use in the schools entitled, "Clean Plate Commando Pledge". The pledge used in Elmira reads:



*To help prevent a critical food shortage
during this war emergency, I pledge to
Fight Food Waste in my home*

As a **KITCHEN COMMANDO*** on the Homefront,

I will plan my food shopping wisely to get the greatest food value for my money.

I will buy perishable foods only in quantities that can be stored without danger of spoilage.

I will store my foods carefully to prevent loss of food value.

I will prepare all foods by approved methods that will make them attractive and appetizing, and at the same time save the greatest amount of nourishment.

I will serve individual portions that are not too generous . . . so that plates will be clean. If more food is wanted, I will serve second helpings.

I will make use of all leftovers . . . keeping alert to new ideas for preparing and serving them.

I will be ready to adjust my family's menu to make the best use of whatever foods are available.

*Courtesy of New York State Federation of Home Bureaus

Signed

Address

A symbol (see pledge) was designed for use on all printed campaign material in Elmira. Under the picture appeared the caption, "Be a Kitchen Commando". The symbol was used on window stickers, pledges, milk bottles and newspaper publicity.

"Fight Food Waste" was the slogan adopted by the New Kensington Committee. Pledge cards entitled "Clean Plate Club" were prepared for use of grade school children. The New Kensington pledge read:

CLEAN PLATE CLUB

I WANT TO JOIN THE "CLEAN PLATE CLUB" - BECAUSE;

I AM A JUNIOR CITIZEN OF THE UNITED STATES.

I WANT TO DO MY PART FOR VICTORY.

I WANT TO HELP MY COUNTRY TO BE STRONG.

THEREFORE, I MAKE THE FOLLOWING PLEDGE -

I WILL SERVE MYSELF ONLY THE AMOUNT OF FOOD I CAN EAT.

I WILL CLEAN MY PLATE AT EVERY MEAL.

SIGNED _____

ADDRESS _____

NEW KENSINGTON COMMUNITY NUTRITION PROGRAM

Speakers' bureau organized

To acquaint all interested community organizations with the aims of the campaign, the nutrition committees of both Elmira and New Kensington formed a corps of speakers who were available upon call. Among the groups requesting speakers were community service clubs, scout organizations, teachers associations, and church groups.

Food demonstrations conducted

In Elmira, two public food demonstrations were given during the campaign. One was sponsored by the Red Cross Canteen Corps in cooperation with the nutrition committee and the State Electric & Gas Corporation. The other was sponsored by the County Home Bureau Leaders and was conducted by a representative of the National Livestock and Meat Board of Chicago. These demonstrations reached only a few people. They were not limited to the problem of food waste.

In New Kensington only one food demonstration was given. A representative of a local manufacturing company sponsored "100 Ways to Prevent Food Waste" which presented food-conservation practices. Songs satirizing food waste were sung by the assembly and a dramatic skit depicted methods of saving food in the home. Only a few persons were present.

Newspapers promoted campaign

Newspapers of both communities were particularly useful in promoting the campaign.

All of the principal Elmira newspapers, the Elmira Star-Gazette, The Advertiser, and The Sunday-Telegram, published fairly complete accounts of all phases of the campaign. Some information was carried by The Reporter, The Labor News, and by the Chemung Valley Reporter published at Horsehead. In addition to carrying editorials and announcements concerning meetings and demonstrations, the newspapers carried a continuous run of feature articles, many with the pictures showing specific ways of saving and conserving food. One newspaper carried regularly a question-answer column entitled, "What's Your Food Waste Measurement"? This was devoted to problems of food storage and preparation and the use of leftovers. The releases stressed specific items and practices which were included in the pre-campaign and post-campaign interviews.

New Kensington's one daily newspaper, The New Kensington Dispatch, devoted considerable space to the campaign, including announcements, editorials, and feature stories with pictures. Two industrial newspapers, a CIO paper and the plant paper of a large industrial concern carried campaign information. Most of the newspaper items in this community, however, were in the form of generalized exhortations to "save food" and patriotic appeal was strong. Little specific advice on methods of saving food was printed in newspapers. Action pictures of local residents participating in the community canning program and in the demonstration projects and of school children signing pledges were given prominent display.

Radio broadcasts used

Radio stations WENY and WKPA of Elmira and New Kensington, respectively, cooperated in disseminating the food-conservation information.

The City Manager of Elmira keyed the launching of the campaign in his city in a broadcast sponsored by the nutrition committee. Frequent spot announcements were made each day. The Home Bureau Hour, sponsored by the Chemung County Home Demonstration Agent, regularly included "Fight Food

Waste" programs throughout the 2 weeks of the campaign. On September 20 & 27 radio quiz programs on food conservation were broadcast.

A radio broadcast of a round-table discussion concerning the aims and value of a food-conservation drive was the first official note of the New Kensington campaign. A recurrent program, "Through Feminine Eyes," which was broadcast three times a week, carried instruction on specific ways of conserving food. Broadcasts directed to school children came on three occasions. The first was designed for children of the first three grades; the second for grade four to six, and the third for junior high and high-school children.

Schools were active

Considerable enthusiasm was generated among school children of all ages. Although the campaigns were launched just as school was opening, school officials adjusted regular activities to give maximum support to the campaigns. In both communities teachers and students together developed and carried out campaign activities. It was generally agreed that the school programs should develop from discussion among the children. Pledges, to which reference has been made, were products of student discussion. Preliminary copies of the pledges were criticized and revised. Later they were signed by the students.

In Elmira, the Riverside School produced a short skit pillorizing food waste which was written by the fifth grade. Third-grade students of the same school kept diaries telling how they saved food. At the Elmira Free Academy, "Fight Food Waste" posters and printed "tents" were placed in the school cafeteria by students of the homemaking class. Many students in this class assisted in canning food for the school cafeterias. The school paper, Vindex, featured an article on waste in its first edition of the new school year. The Southside High School students of the Usher's Club examined trays as they were returned to the school cafeteria kitchen and urged students to buy only as much as they expected to use.

Pledge cards were signed by New Kensington students in ceremonial fashion. They met in the school auditorium to hear radio skits dramatizing the "Clean Plate Club". At the appropriate moment in the dramatization they repeated the pledge in unison and signed the pledge cards.

The food-conservation program in the public schools did not end with the campaign; it had only begun when the committee ceased campaign activities. A series of articles in the school papers was planned, and several assembly programs were devoted to food conservation. Teachers acted as consultants to the students on their personal food problems. Older students who were talking over the duties of feeding their families were given detailed instruction on planning meals and buying and preparing food. Teachers discussed conservation lessons during regular faculty meetings. They requested that the Food Distribution Administration provide films on food conservation geared to the interests of school children. This is an excellent example of how a campaign, limited in time and in scope, can nevertheless provide stimulus for continuation after the campaign promotion has terminated.

OCD Block Leaders took active part

In both communities block leaders were assembled and told about the campaign. They were asked to distribute copies of the United States Department of Agriculture pamphlet called "Fight Food Waste in the Home" to all housewives on their block and to discuss its significance. In Elmira, another pamphlet entitled, "Vitamins From Farm to You" was also distributed. In addition, the Elmira Block Leaders distributed the "Kitchen Commando" pledge which asked housewives to promise that they would plan meals and buy, store, and prepare food wisely, use leftovers, and that they would serve "not too generous" individual portions. Housewives who signed the pledge were given window stickers, "I am a Kitchen Commando". In the outlying area of the Elmira community the Extension Services' Neighborhood Leaders distributed the same pamphlets and pledges that were used by the block leaders in the city proper.

Boy and Girl Scouts assisted

The Food Conservation Program was presented to the Girl Scout leaders in both communities. Boy Scout organizations were asked to participate in New Kensington; in this city they distributed 500 large posters entitled, "Food is a Weapon-Don't Waste It" to storekeepers, and the scouts sponsored a rally at which skits and stunts pertaining to food conservation were presented. The Elmira Scout organizations did not participate actively during the period of the campaign but plans were made to promote a "Waste Prevention Program" within the organization later in the year.

Other community organizations participated

In Elmira, the county 4-H Club started a campaign to "Fight Food Waste." It was carried on within the 4-H Club organization and was intended to continue for the duration of the war. The Chemung County Home Bureau made "Fight Food Waste" an integral part of its future programs. The Visiting Nurse Association of Elmira was asked to distribute the two folders, "Fight Food Waste in the Home" and "Vitamins From Farm to You" during their regular home visits.

The New Kensington Chamber of Commerce gave active aid to other civic groups participating in the campaign. It arranged for three boys to act as "sandwich men" carrying colorful and amusing posters illustrating ways to and reasons for fighting food waste. These boys paraded for the benefit of all local civic groups at their regular weekly meetings during the campaigns and they appeared in hotels and other public eating places.

Business and industrial firms contributed

The Elmira committee sent letters to advertising managers of local commercial firms asking for their cooperation in the campaign. One Elmira department store did an outstanding job, carrying a quarter-page advertisement in the Star Gazette devoted solely to the campaign and for one week devoting an entire window front to a "Be a Kitchen Commando-Fight Food Waste" exhibit. Two local Elmira baking companies displayed, on their delivery trucks, bumper signs carrying the slogan "Be a Kitchen Commando." These signs were prepared

and contributed by a member of the nutrition committee. One of these companies also contributed a full page of advertising of the campaign in the Sunday Telegram. Hotel and restaurant managers in Elmira displayed 1,200 printed table tents which urged patrons to "Eat all you order."

In New Kensington, representatives of the three large industrial plants worked together closely on the campaign. "Food is a Weapon" posters appeared on all bulletin boards of the plants. Articles and pictures were printed in the local daily newspapers and in the industrial newspapers asking that all workers do their part in fighting food waste; they were encouraged to select their lunches at the plant cafeterias with care and to buy no more than they could eat.

EVALUATION OF THE CAMPAIGNS

The extent to which the campaigns were "successful" is demonstrated in several ways: (a) changes in food practices as indicated by comparisons of pre-campaign and post-campaign interviews; (b) changes in amount of garbage; (c) the degree of coverage by promotion; (d) attitudes toward the campaign. These are considered separately.

Changes in Food-Conservation Practices

Differences in the percentage of housewives engaging in selected food practices before and after the campaigns constitute the principal measure of the effectiveness of the promotion.

Conservation practices more prevalent

Before-and-after comparisons of food-conservation practices engaged in by pre-campaign and post-campaign respondents reflect influences of the promotional efforts (table 2). Of 17 specific practices about which Elmira housewives were queried before and immediately following the campaign it was found that:

- 9 conservation practices apparently increased markedly,
- 6 conservation practices apparently remained substantially unchanged,
- 2 conservation practices had decreased.

Concerning the 17 specific practices about which New Kensington housewives were interrogated before and after the campaign, the following changes were observed:

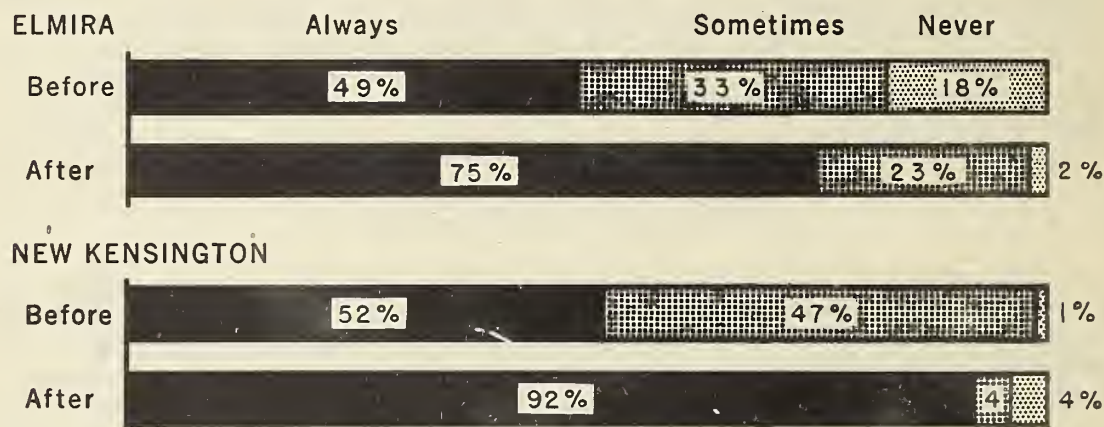
- 11 conservation practices apparently increased markedly,
- 4 conservation practices apparently remained substantially the same,
- 2 conservation practices had decreased.

Outer leaves of cabbage used more often

Before the campaign about half of the housewives in both communities "always" used outer leaves; after it, three-fourths of the Elmira and nine-tenths of the New Kensington housewives used them. Only an insignificant

proportion of the housewives "never" engaged in the practice after the campaign although more than one in six of the Elmira housewives did before the date the campaign was launched.

FIGURE 1. - FREQUENCY OF USE OF OUTER LEAVES OF CABBAGE

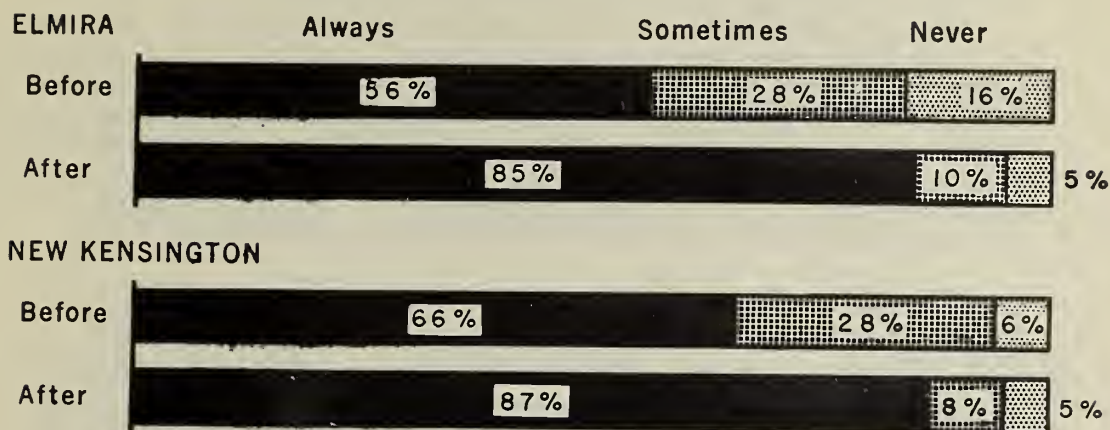


Notwithstanding the apparent improvement there was little evident change in the proportion of housewives professing knowledge that using the outer leaves would result in saving food. However, there was little room for increased knowledge since fewer than 5 percent in both cities were unaware of it before the campaign (table 3). This practice was considered applicable to a given housewife only if she had served cabbage during the last month.

Increase in use of burned toast

Burned toast was more frequently scraped and used by the post-campaign respondents than by those interviewed before the campaigns. In both cities approximately seven-eighths "always" salvaged the over-toasted bread after the campaign as compared with fewer than two-thirds before. The proportion "never" using the burned toast decreased slightly in New Kensington and markedly in Elmira.

FIGURE 2 - FREQUENCY OF SCRAPING AND USING BURNED TOAST

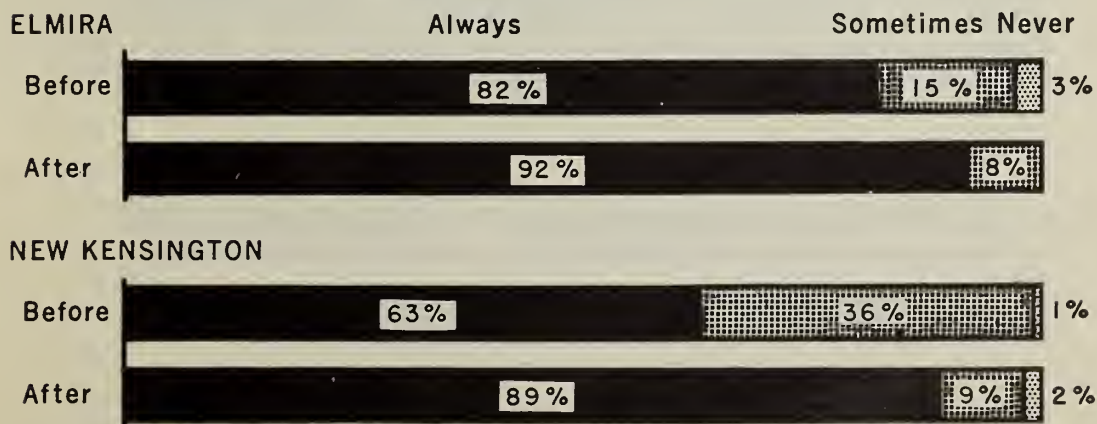


In calculating the proportion of housewives engaging in this practice only those who had actually burned toast during the month before the interview were included. What constituted knowledge of the practice was apparently not uniformly understood by the interviewers. In Elmira, slightly fewer post-campaign respondents than pre-campaign respondents affirmed knowledge of the campaign. A significant increase in knowledge was observed in New Kensington, however (table 3).

Stale bread used more frequently

Following the campaign there was a definite increase in the proportion of families who reported "always" consuming stale bread and a parallel decrease in those "never" using it (fig. 3). At the end of the campaign 99 percent of the housewives had knowledge of the desirability of the practice. These changes were observed in both communities (table 3). Only those respondents who reported having stale bread during the past month were included in the calculations.

FIGURE 3. - FREQUENCY OF USE OF STALE BREAD



Fats were rendered and used more after the campaigns

A larger proportion of the housewives reported that they were rendering and using fats after the campaign than before. In Elmira the percentage "always" salvaging and using fats increased from 87 to 97; in New Kensington, from 65 to 87 (figure 4). Knowledge of the possibilities of using leftover fats increased in both places (table 3). The practice was considered applicable only for families which during the month had fats that could be rendered and reused.

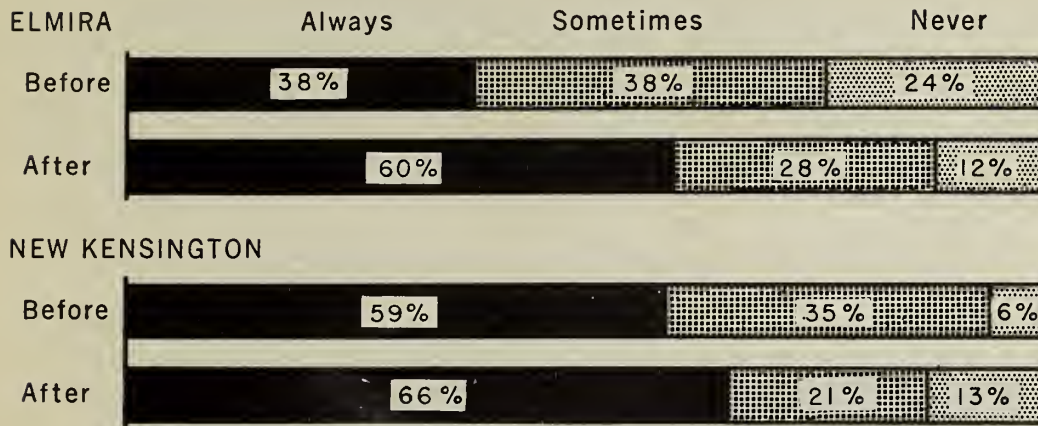
FIGURE 4. - FREQUENCY OF RENDERING AND USING FATS



Vegetable cooking water used more often

An increase in the use of vegetable cooking water was observed after the campaigns in both cities. Among the Elmira housewives there was a definite increase in those "always" using it and a parallel decrease in those "never" doing so. In New Kensington a larger proportion "never" followed the practice after the campaign than before, although there was a significant increase in the proportion of those "always" using the cooking water (fig. 5). There is no logical explanation for this apparent discrepancy. Knowledge of the practice did not change much, there being a high percentage having knowledge before the campaign.

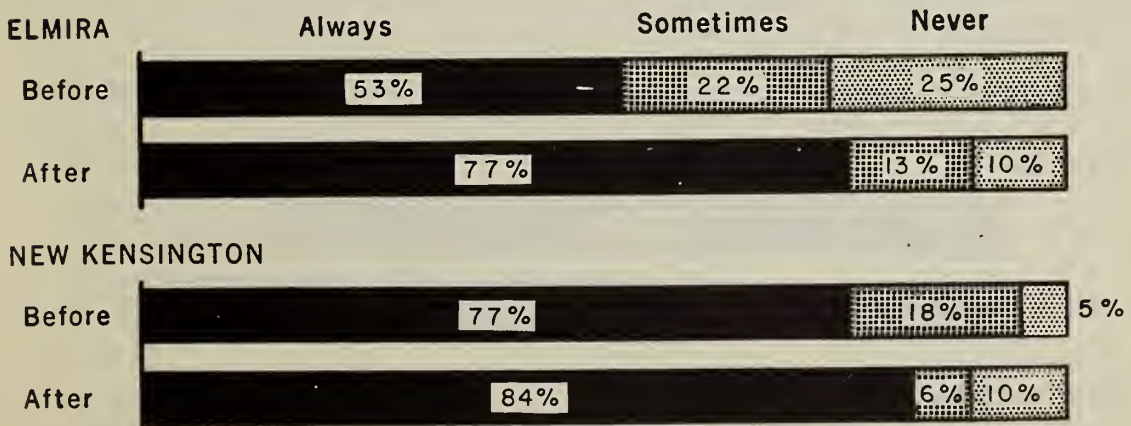
FIGURE 5. - FREQUENCY OF USE OF VEGETABLE COOKING WATER



Poultry bones and skins utilized more frequently

Following the campaigns in both communities there was an increase in the percentage of housewives making use of poultry bones and skins in soups and stock. Among Elmira housewives the percentage "always" using them increased from 53 to 77; among New Kensington housewives, from 77 to 84. The percentage "never" engaging in the practice decreased markedly in Elmira but increased in New Kensington (fig. 6). Knowledge of the practice increased from 88 to 100 percent in New Kensington and from 94 to 96 percent in Elmira (table 3).

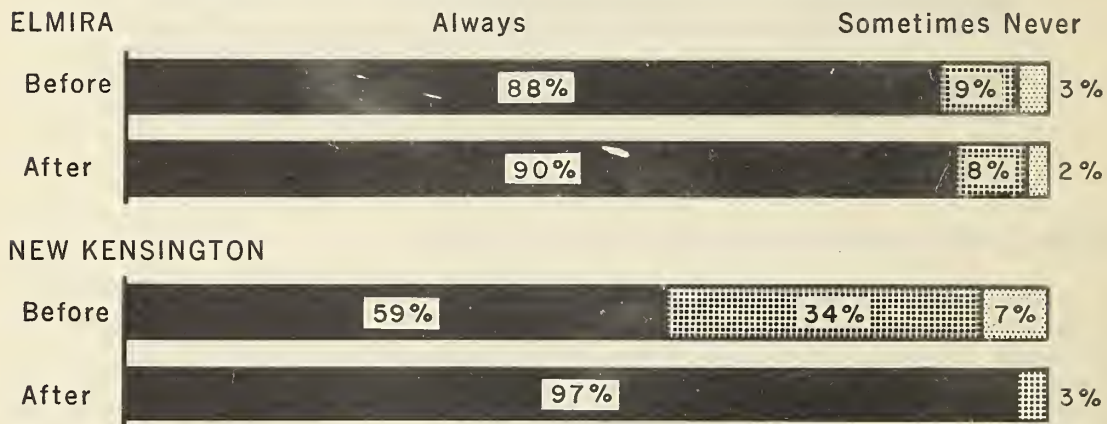
FIGURE 6. - FREQUENCY OF USING POULTRY BONES AND SKIN



Use of soured milk increased

After the campaigns 97 percent of the New Kensington housewives and 90 percent of the Elmira housewives were using soured milk in contrast to 59 and 88 percent respectively before (fig. 7). After the campaigns knowledge of the practice was almost universal, reflecting a significant increase in Elmira and a slight increase in New Kensington (table 3). The practice was considered applicable only to families that reported having soured milk at least once during the month before the interview so it applied to fewer families after the campaigns, since the weather was colder.

FIGURE 7. - FREQUENCY OF USE OF SOURED MILK



Greater effort to utilize all citrus fruit juice after campaigns

The proportion of housewives who "always" attempted to squeeze all juice from citrus fruit increased in both communities during the campaigns. Similarly, the proportion who "never" made the effort decreased in both instances (fig. 8). The campaign promotion apparently increased knowledge of the practice to 100 percent (table 3).

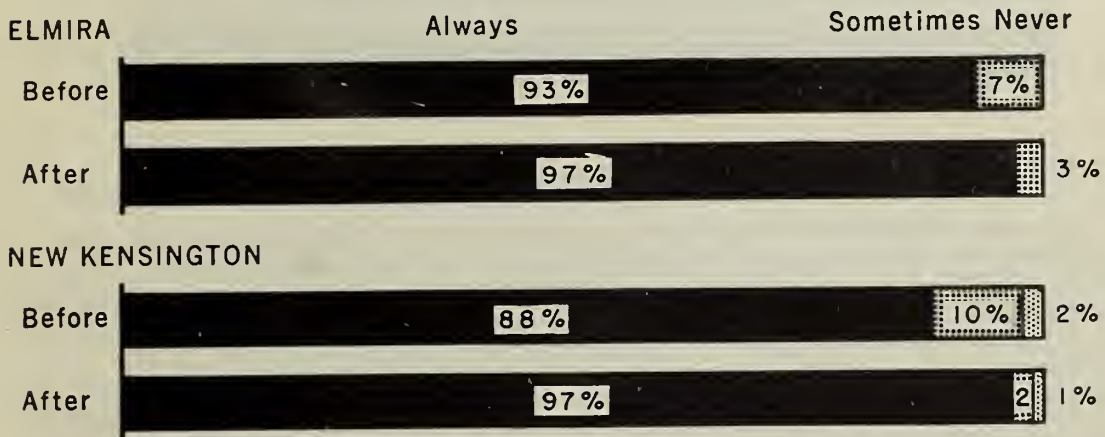
FIGURE 8. - FREQUENCY OF UTILIZING ALL CITRUS FRUIT JUICE



Unservd vegetable leftovers used more frequently

Although about nine-tenths of the housewives reported that they "always" utilized unserved vegetable leftovers before the launching of the campaigns, larger proportions did so after they had been exposed to the food-conservation educational information (fig. 9). The exposure also appeared to have eliminated the small percentages of housewives who professed no knowledge of the practice before the campaigns (table 3). The practice was considered applicable to most families since vegetable leftovers were reported by almost all of the respondents.

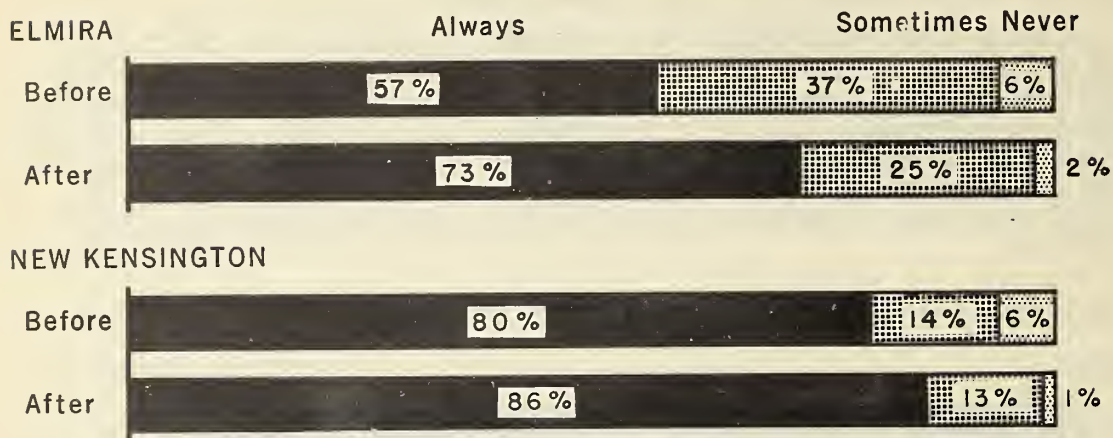
FIGURE 9. - FREQUENCY OF UTILIZATION OF VEGETABLE LEFTOVERS



Practice of adding baking soda to vegetable cooking water decreased

Adding baking soda to water in which vegetables are cooked is considered an undesirable nutritional practice since vitamins are destroyed in the process. The campaigns aimed to induce housewives to desist from thus using soda. How successful the efforts were is indicated in the increases from 57 to 73 percent of the Elmira and from 80 to 86 percent of the New Kensington housewives who "always" desisted from adding soda. In other words, these proportions of persons "never" added soda. In figure 10 the "always" means "always desisted," the practice being worded negatively to parallel (in terms of desirability) the other practices which are reported in the study.

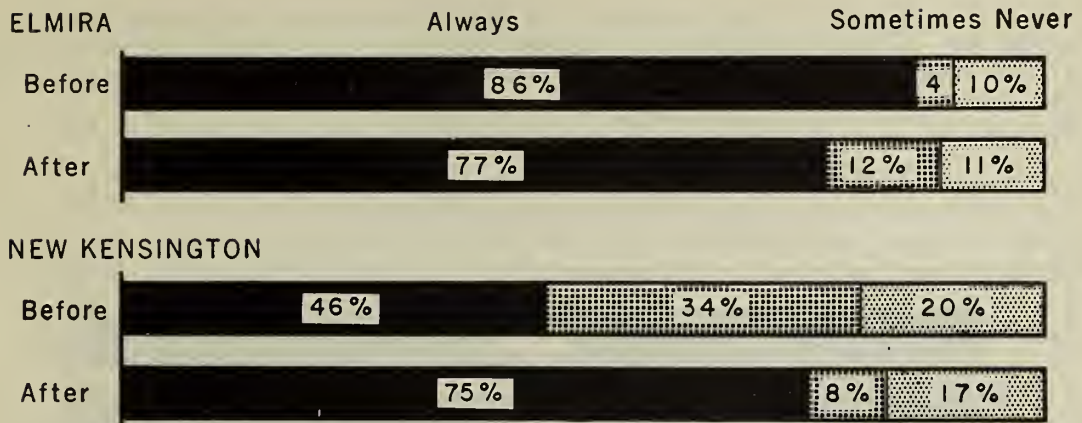
FIGURE 10. - FREQUENCY OF DESISTING FROM ADDING BAKING SODA TO VEGETABLE COOKING WATER



Changes in use of lunch box leftovers inconclusive

Unforeseen consequence decreased the usefulness of before-and-after comparisons of the percentage of housewives utilizing lunch-box leftovers. The campaign promotion apparently decreased the proportions of families having such leftovers to a point where only small numbers were applicable. Therefore, the comparisons of the percentages of applicable families who engaged in the practice before and after the campaign do not fully reflect the effects of the campaign. Nevertheless, there was an increase from 46 to 75 in the percent of New Kensington housewives who "always" followed the practice. In Elmira the percentage decreased from 86 to 77 (fig. 11). Perhaps more significant are the facts that in Elmira the percentage of families that had lunchbox leftovers before the campaign was 31 as compared with 17 after; in New Kensington, 51 percent before and 48 percent after (table 2).

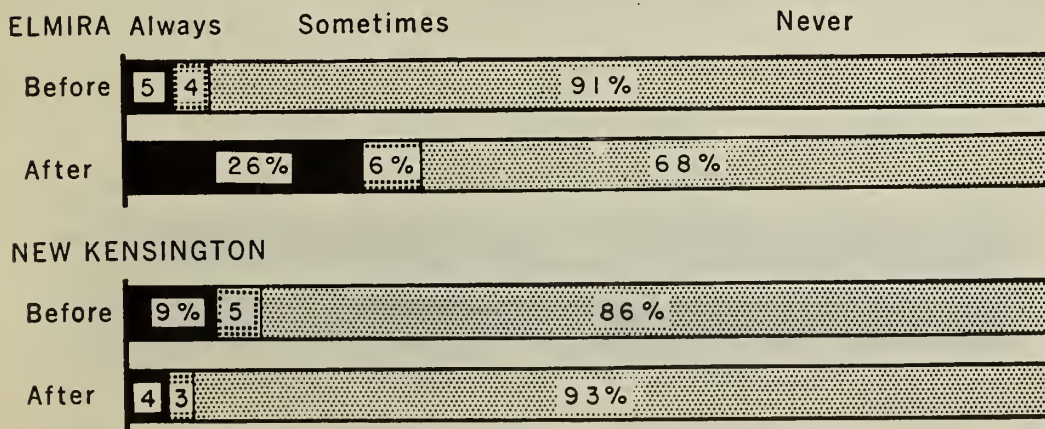
FIGURE 11. - FREQUENCY OF UTILIZATION OF LUNCHBOX LEFTOVERS



Practice of putting bread in refrigerator increased only in Elmira

Before the campaigns only a small proportion of the housewives were aware of the possibilities of saving bread by wrapping it and placing it in the refrigerator. Following the promotion, however, about one-fourth of the Elmira housewives had become acquainted with the practice and "always" engaged in it. However, the percentage of New Kensington housewives who "always" followed the practice decreased from 9 to 4 (fig. 12). Results of the interviews indicate that there may have been misunderstandings on the part of the interviewers concerning this practice.

FIGURE 12. - FREQUENCY OF WRAPPING AND REFRIGERATING BREAD

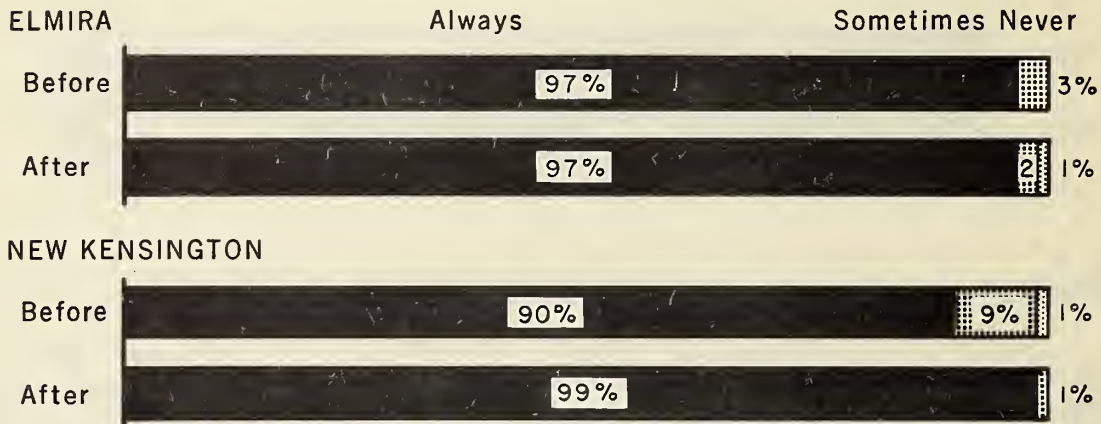


Most housewives use unserved meat and fish leftovers

The practice of utilizing unserved meat and fish leftovers was so common before the campaign that the promotion, at best, could make only small improvement. In Elmira 97 percent of the housewives "always" followed this practice

both before and after the campaign. In New Kensington, the percentage of housewives "always" engaging in the practice increased from 90 percent to 99 percent (fig. 13). Knowledge of the practice increased from 97 percent in both communities to 100 percent (fig. 3).

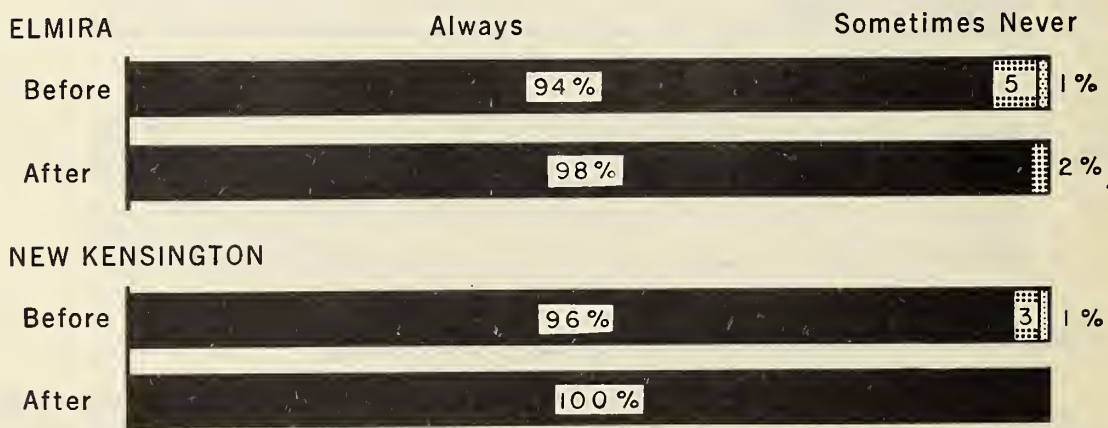
FIGURE 13. - FREQUENCY OF USING UNSERVED
MEAT AND FISH LEFTOVERS



Practice of picking bones of meat and poultry almost universal

So large was the percentage of housewives who picked bones of meat and poultry that little improvement was possible but the percentages increased in both communities (fig. 14). Knowledge of the practice increased from 97 and 99 to 100 percent in the communities (table 3).

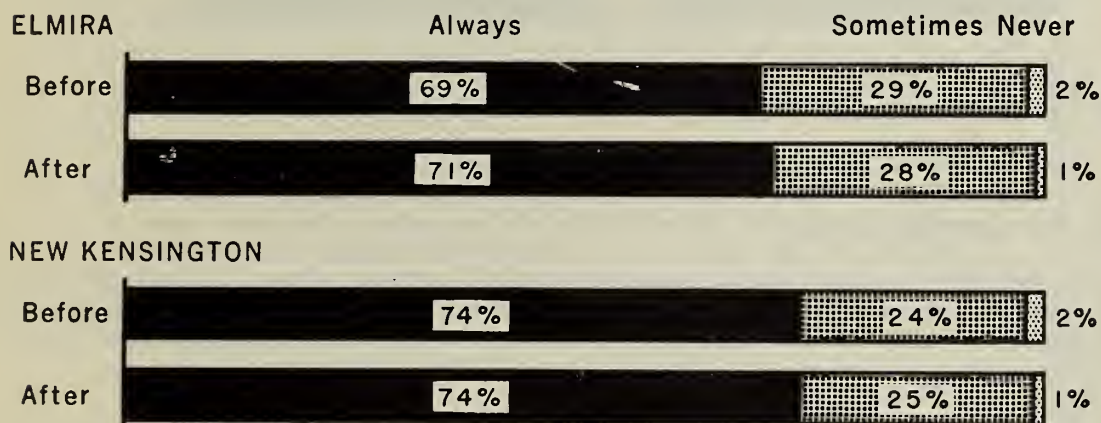
FIGURE 14. - FREQUENCY OF PICKING BONES



Imperceptible changes in the practice of cooking vegetables with a covered pan

The percentages of housewives engaging in the practice of cooking vegetables with a covered pan remained practically the same in both communities before and after the campaigns (fig. 15). Knowledge of the practice increased slightly, although practically all housewives knew of the desirability of the practice even before the campaign (table 3).

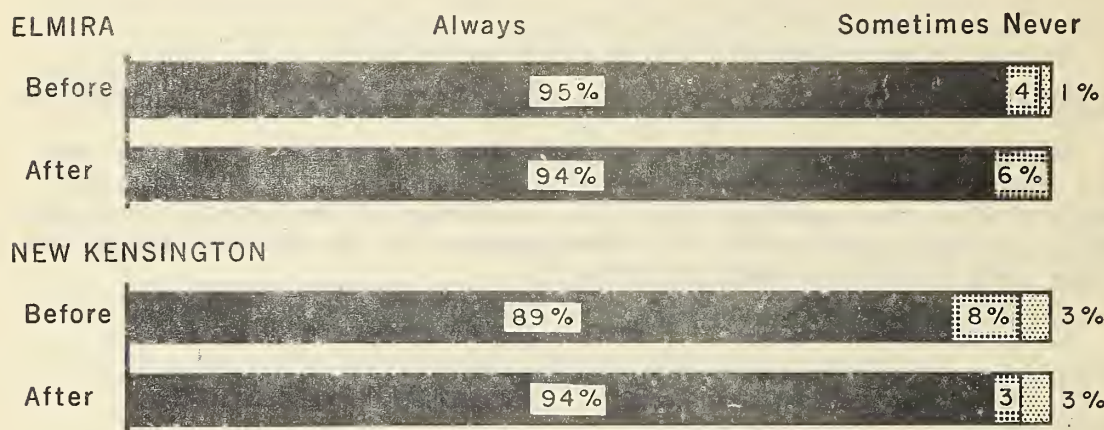
FIGURE 15. - FREQUENCY OF COOKING VEGETABLES WITH COVERED PAN



The practice of insisting on clean plates increased in New Kensington

Even before the campaigns at least nine-tenths of all the housewives insisted that members of their families eat all the food on their plates. The percentage was increased slightly during the campaign in New Kensington but in Elmira the change was imperceptible (fig. 16). Knowledge of the practice was increased in both cases from 97 to 100 percent (table 3).

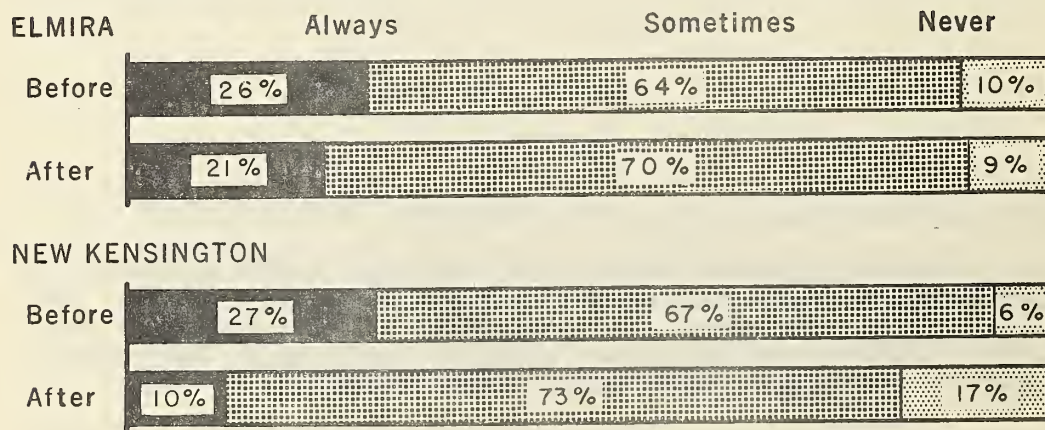
FIGURE 16. - FREQUENCY OF INSISTING THAT ALL FAMILY MEMBERS
EAT ALL FOOD ON THEIR PLATES



Fewer families boiled potatoes with skins after the campaign

This decrease in the practice of boiling potatoes with skins may be attributed to the fact that tender new potatoes, which were more plentiful before the campaign, are more amenable to boiling with skins than late potatoes. In Elmira, 26 percent of the housewives "always" followed the practice before the campaign as compared with 21 percent after; in New Kensington, the comparable percentages were 27 percent before and 10 percent after (fig. 17). Fewer than one housewife of each 25 was unaware of this practice and the percentage did not change significantly during the campaign.

FIGURE 17. - FREQUENCY OF BOILING POTATOES WITH SKINS



CHANGES IN QUANTITIES OF GARBAGE

Reliance upon garbage statistics alone for ascertaining the effect of the campaign would be invalid for several reasons. First, the statistics were available only in Elmira, and the available figures include all non-combustible garbage. Second, judgments of the effect of the campaign would 5/

5/ New Kensington's garbage-collection records were considered inadequate for use in this study.

have to be based upon comparisons of the 1942 and 1943 quantities. Third, the quantity of garbage from victory gardens was believed to be exceptionally high in 1943. About 58 percent of the Elmira families interviewed had victory gardens and about 85 percent of these did home canning, which yields great quantities of cobs, husks, skins, etc. Fourth, the quantity of shipped-in produce that spoiled before it could be sold was considered to be abnormally large in 1943. Fifth, the quantity of garbage was probably greater than usual in August 1943, because near-spoiled fruits and vegetables which formerly were sold to low-income families were relegated, in large amounts, to garbage cans. War-time demand for labor and good wages have decreased the demand for such produce. Sixth, garbage weight is markedly increased by rain or snow, a fact which may alone account for wide fluctuations in garbage statistics. The Superintendent of the Municipal Garbage Plant in Elmira estimated that only about 5 percent of the total garbage was edible food.

Elmira garbage decreased in 1943

An examination of the garbage statistics shows that, compared with corresponding months of the previous year, Elmira had less garbage both during the campaign and immediately after. This decline was not wholly attributable to the "Fight Food Waste" campaign since it started long before the campaign was launched.

<u>Month</u>	<u>Pounds of Garbage</u>	
	<u>1943</u>	<u>1942</u>
June	1,181,600	1,259,600
July	1,199,400	1,435,400
August	1,479,800	1,434,200
September	1,548,400	1,581,800
October	1,239,800	1,313,600

These figures alone are inconclusive. They are more indicative of food waste when considered together with other evidences of improvements in food conservation practices.

Coverage by Campaign Promotion

The campaign committees aimed to enlist full participation of all housewives in the drive to improve food-conservation practices. Both the Elmira and New Kensington committees succeeded in carrying the campaign information to a substantial proportion of the residents.

Campaign information reached many housewives

Nine of every ten Elmira housewives heard of the food-conservation campaign through one or more media of communication. Of the 306 post-campaign informants, 272 (89 percent) assured the interviewers that they had either read some of the campaign literature or heard of it on the radio or in person-to-person conversation (table 4).

Five specific food-conservation practices were featured extensively throughout the Elmira campaign. Nearly two-thirds of the interviewed housewives recalled having received advice about using unserved meat and fish leftovers; more than one-half heard advice to use the outer leaves of cabbage; two-fifths heard that they should use poultry bones, skin, and fat for broth; one-third heard that vitamins are destroyed by the use of baking soda in vegetable cooking water; and one-fifth, that they should scrape and use toast that has been burned (table 5).

In New Kensington, 83 percent of the housewives heard of the campaign through one or more of the media (table 4). Only a small proportion of the information disseminated was concentrated on specific practices. This specific advice was given largely through the Office of Civilian Defense block leader training program, the public food-conservation demonstration, and the radio program "Through Feminine Eyes", but six specific food practices were featured in some way. Three-fourths of the interviewed housewives reported that they had heard pleas that they clean plates and that they render and use fats. Two-thirds said they had heard advice on the use of unserved meat and fish leftovers. Instruction on the use of vegetable cooking water was heard by three-fifths of those interviewed while a little less than one-half reported hearing about the use of stale bread. One third heard of the practice of wrapping and putting bread in the refrigerator (table 6).

These indications of the extent of coverage are probably understated for it is possible that other housewives had been exposed to the general or specific food-conservation information without realizing that it was part of a comprehensive community campaign.

Best coverage through impersonal channels

The "impersonal" channels of information—press and radio—reached far more people than those media that involve face-to-face meeting. This observation was made in both Elmira and New Kensington. Of the Elmira housewives who heard of the campaign, 87 percent received their information through the newspapers and 85 percent through the radio. Only 36 percent heard of the campaign through Office of Civilian Defense block leaders; 30 percent through neighbors or friends. Window displays attracted the attention of one-sixth of the housewives while school children carried home information to one-tenth (table 4).

Not only was general exhortation to "Fight Food Waste" carried most widely by Elmira newspapers and the radio, but also advice concerning specific conservation practices reached most housewives through these channels. The advisability of using outer leaves of cabbage, of not adding baking soda to vegetable cooking water, of scraping and using burned toast, of using portions of meat and fish leftovers, and of using poultry bones, skin, and fat for broth was conveyed by newspapers to more than one-half of all housewives. Radio had almost as wide an audience. Other media were markedly less effective. Posters and window displays had comparatively little effect.

In New Kensington results of the post-campaign interviews show that the press and radio were equally effective in disseminating information. Of the housewives who had heard of the campaign, 85 percent obtained their information from the daily newspapers, 74 percent from the radio. Two-fifths reported

acquaintance with the campaign through posters; the same proportion through schoolchildren. Neighbors and friends carried the information to one-third. Window displays were seen by one-fourth of the respondents. Coverages by block leaders was less than 10 percent. The interviewers found that the majority of housewives had not heard of the Block Leader organization. Only 15 of the total 218 informants said that a Block Leader had called upon them during the campaign, and of this number only 6 had discussed the "Fight Food Waste in the Home" pamphlet. Nine of the persons visited, however, declared they had used one or more of the suggestions listed in the pamphlet. It is possible that other respondents may have been visited by Block Leaders but were unaware of the organizations represented.

As a further check on the effectiveness of these media in conveying information about specific food practices, six of these practices were selected for further testing in New Kensington. Housewives were questioned as to whether they had heard of these practices through any of the informational media, and if so, which media. The results further indicate the importance of the newspaper and the radio in the campaign. Posters and window displays had an indirect effect on housewives through information brought to their attention by a child, a neighbor or a friend, or a Block Leader.

Attitudes Toward Campaign

Expressions of attitudes of housewives toward the campaign in general and toward specific aspects of it were forthcoming during the interviews. Attitudes of interviewers, of members of the campaign committees, and of various participant observers were also learned.

Housewives apathetic toward campaigns

Attitudes toward the campaigns in general were characteristically neither extremely favorable nor extremely unfavorable; they were more often neutral.

Only one of the five post-campaign Elmira interviewers reported that he had observed "enthusiasm;" one reported "antagonism." In the words of one of the interviewers the respondents showed "...a certain apathy, not so much indifference as disinterestedness." Another interviewer considered it "courteous indifference." Housewives said they "...already knew about conserving food."

In the New Kensington campaign, interviewers met with a cooperative attitude on the part of housewives who were questioned. People responded favorably to patriotic propaganda on food waste. Most of the New Kensington housewives had heard of a community canning project, which was a part of the Nutrition Committee's program, and which they heartily endorsed. They tended to identify the entire food waste campaign with it.

Elmira Block leaders affirmed that they were asked to do a job in which they were not particularly interested and for which they were unprepared. Some block leaders had difficulty in gaining admission to homes; others found friendliness but disinterestedness; very few felt that the main purpose of the visit—saving food—was accomplished.

Housewives considered campaigns beneficial

Although many housewives were apathetic to the campaigns they considered them beneficial to their community and necessary for housewives other than themselves.

In answer to the question "Do you think the campaign a good thing for the community?" 87 percent of both the Elmira and the New Kensington housewives answered "yes."

Of the 306 Elmira post-campaign respondents, 184 expressed reasons for their opinions; of the 218 in New Kensington, 146 did so. Among the reasons stated for thinking that the campaigns were beneficial were the following:

<u>Reason</u>	<u>Elmira</u> (percent)	<u>New Kensington</u> (percent)
Saves food	86	77
Educational	4	7
Other benefits	<u>10</u>	<u>16</u>
	100	100

Housewives consider themselves food conservators

Housewives admitted a few infractions of good food conservation practices but most of them considered themselves good managers of their kitchens. One interviewer in Elmira expressed it as follows: "Without exception, the housewives with whom I talked expressed great confidence in their culinary abilities, and stated that they had no cooking problems to submit to the Government, or to anybody else, other than the universal question of how to reduce prices and to relieve the rationing stamp requirement so that the housekeepers could obtain the material needed to effect the desired economies." The applicability of this statement in both Elmira and New Kensington is substantiated by the fact that only a small number of the housewives answered "yes" to the question, "Would you like help with any food problems?"

When Elmira housewives were asked to state where they considered food waste most prevalent, they reported as follows:

32 percent said most waste occurs in homes
44 percent said most waste occurs outside homes
24 percent had no definite opinions

AMOUNT OF FOOD WASTE IN HOMES

Although this study was designed to test the effectiveness of campaigns rather than to show quantities of food waste, some indication of the prevalence of waste was indicated. The 60 "check" interviews made in New Kensington (see pages 4 and 5) asked specifically how much of certain commodities were wasted. Garbage statistics for Elmira afforded crude estimates of quantities of food waste but as indicated elsewhere, the reliability of garbage statistics is questionable. The opinions of housewives about the extent of their wastefulness are indicative of the extent of food waste. The frequency that housewives

engaged in the selected food conservation practices were indicative of waste, although they do not reveal quantities of food losses.

Quantity of food waste in homes probably small

Questioning of 60 New Kensington housewives by two skilled interviewers revealed that insofar as housewives could recall, only nine slices of bread were thrown away in three homes during the month preceding the interrogations. Only one pint of milk and two carrots were discarded. No waste of the following commodities was admitted by the 60 housewives: meat, fish, potatoes, beets, lettuce (except outer leaves), apples, pears, and citrus fruits. Twenty-five portions of unused food were reported to have been left on plates during the period. The greatest source of quantitative waste was apparently in peeling rather than scraping or boiling certain vegetables and fruit.

Opinions of housewives were that the quantity of food wasted in their own homes was negligible although they believed that other housewives were less thrifty. Interviewers uniformly believed that their respondents were sincere in their affirmations of "no waste." These opinions of housewives and interviewers are further reflected in the high proportion of families that "always" followed the food conservation practices reported elsewhere in this study.

RECOMMENDATIONS

This study of the effectiveness of two campaigns against food waste discloses both accomplishments in apparently changing food-conservation practices and limitations in the campaigns. As guides for possible future similar campaigns the following conclusions and recommendations are presented:

(1) Certain food conservation practices can be inculcated in consumer food habits by the extensive promotion of local Nutrition Committees. Successful results, however, can be accomplished only with a maximum of community effort and cooperation. The urgency of effecting changes and the cost of doing so to the community demand that decisions be well thought out before the launching of a campaign. Community programs should be designed to appeal to the social and economic groupings in the community.

(2) Community campaigns against food waste may foster better working relationships among various community organizations, and may lead to continuing or permanent community programs. It is recommended that future campaigns solicit participation of all appropriate community organizations, and that they be designed in such a manner that long-time programs may be stimulated.

(3) Whether a community's campaign against quantitative food waste should be directed toward the consumer may seriously be questioned, because of the apparent high percentage of housewives who now follow good conservation practices. It is likely that comparable efforts at other parts of the distributive system, than the family kitchen, might bring greater savings of food. If such a consumer campaign is to be conducted, it might well be integrated with a broader program to make more food available for consumption. Nutritional as well as quantity conservation should be emphasized in

consumer campaigns. Conservation of food at all levels of the distributive system could be urged, along with Victory Gardens, home canning promotion, and nutrition education.

(4) Promotional materials originating in a national office should be adaptable to local conditions.

(5) In choosing the informational media to be used in a campaign it should be recognized that full coverage by personal contact is unlikely even where there is a block leader organization. Participation in group meetings is limited mainly to already existing organizations which contain only a small percentage of the population. The extent to which face-to-face discussions, food demonstrations, and meetings are effective in bringing about lasting changes in food habits was not determined in this study. It was found, however, that many more people learned about the campaigns through the press and radio than face-to-face. The conclusion should not be drawn that press and radio are most effective; only that they attain wide coverage with less effort. Comparative effectiveness can be determined only by further study.

(6) Nutrition and food conservation programs should recognize that housewives in general do not welcome suggested changes in methods of conserving food. Resentment against "outside interference" with personal habits is especially strong in the case of food habits since much of the housewife's personality centers about preparation and serving of food.

Table 1.—Comparison of pre-campaign and post-campaign respondents

Characteristics	Families or persons			
	Elmira		New Kensington	
	Pre-	Post-	Pre-	Post-
	Campaign	Campaign	Campaign	Campaign
Number of families:	286	306	250	218
Percent of families:				
Had victory garden	58	58	65	60
Had mechanical refrigerator	75	75	85	91
Had oven	99	99	100	99
Age composition of families:				
All persons	100	100	100	100
under 5	10	9	9	8
5- 14	16	14	17	16
15 - 24	68	69	70	71
65 and over	6	8	4	5

Table 2.- Percentage of housewives engaging in specified food-conservation practices
before and after campaigns
(Continued)

Time period	Elmira						New Kensington					
	Percent engaging in practice			Percent engaging in practice			Percent engaging in practice			Percent engaging in practice		
	Total	Always	Sometimes	Total	Always	Sometimes	Total	Always	Sometimes	Total	Always	Sometimes
		Mostly	Half- time		Mostly	Half- time		Mostly	Half- time		Mostly	Half- time
Use lunchbox	100	86	1	2	1	10	100	46	11	11	12	20
leftovers	100	77	2	-	10	11	100	75	4	2	2	17
Wrap and put bread	100	5	1	1	2	91	100	9	2	2	1	86
in refrigerator	100	26	1	4	1	68	100	4	-	2	1	93
Use unserved meat	100	97	2	1	-	-	100	90	4	3	2	1
& fish leftovers	100	98	2	-	-	-	100	99	1	-	-	-
Pick bones of meat	100	94	4	1	-	1	100	96	2	1	-	1
and poultry	100	98	1	1	-	-	100	100	-	-	-	-
Cook vegetables	100	69	16	12	1	2	100	74	13	10	1	2
with covered pan	100	71	16	10	2	1	100	74	15	8	2	1
Insist on	100	95	3	1	-	1	100	89	5	2	1	3
clean plates	100	94	5	1	-	-	100	94	2	-	1	3
Boil potatoes	100	26	27	25	12	10	100	27	30	25	13	5
with skin	100	21	24	34	12	9	100	10	26	26	21	17

Table 3.- Number and percentage of housewives to whom specified food-conservation practices were applicable and who had knowledge of the practices before and after campaigns

Conservation practice	Time period	Elmdra				New Kensington			
		Applicability a/		Knowledge		Applicability a/		Knowledge	
		Number : applicable :	Percent : applicable :	Number : knowing : practice :	Percent of : applicable : knowing : practice :	Number : applicable : practice :	Percent : applicable : practice :	Number : knowing : practice :	Percent of : applicable : knowing : practice :
Use outer leaves of cabbage	Before : After :	255 : 249 :	89 : 81 :	251 : 243 :	98 : 98 :	217 : 204 :	87 : 94 :	207 : 201 :	96 : 99 :
Scrape and use burned toast	Before : After :	255 : 167 :	89 : 55 :	250 : 155 :	98 : 93 :	174 : 96 :	70 : 44 :	147 : 94 :	84 : 98 :
Use stale bread	Before : After :	275 : 269 :	96 : 88 :	267 : 267 :	98 : 99 :	233 : 199 :	93 : 48 :	226 : 198 :	97 : 100 :
Fats - render and use	Before : After :	282 : 290 :	99 : 95 :	275 : 289 :	98 : 100 :	238 : 217 :	95 : 100 :	229 : 217 :	96 : 100 :
Use vegetable cooking water	Before : After :	283 : 290 :	99 : 95 :	267 : 270 :	94 : 93 :	248 : 214 :	99 : 98 :	239 : 209 :	96 : 98 :
Use poultry bones & skin for broth	Before : After :	267 : 216 :	93 : 71 :	250 : 207 :	94 : 96 :	203 : 184 :	81 : 84 :	179 : 183 :	88 : 100 :
Use soured milk	Before : After :	230 : 156 :	80 : 51 :	174 : 154 :	76 : 99 :	192 : 68 :	77 : 31 :	187 : 68 :	97 : 100 :
Citrus fruit - squeeze all juice	Before : After :	262 : 266 :	92 : 87 :	243 : 265 :	93 : 100 :	239 : 198 :	96 : 91 :	227 : 197 :	95 : 100 :
Use unserved vegetable leftovers	Before : After :	286 : 303 :	100 : 99 :	276 : 303 :	97 : 100 :	248 : 215 :	79 : 99 :	246 : 215 :	99 : 100 :
Baking soda not added to vegetable water	Before : After :	283 : 286 :	99 : 93 :	b/ : b/ :	b/ : b/ :	248 : 210 :	99 : 96 :	b/ : b/ :	b/ : b/ :

Table 3.- Number and percentage of housewives to whom specified food conservation practices were applicable and who had knowledge of the practices before and after campaigns
(Continued)

		Elmira						New Kensington					
Conservation practice	Time period	Applicability a/			Knowledge			Applicability a/			Knowledge		
		Number applicable	Percent applicable	Number knowing practice	Percent applicable	Number knowing practice	Percent applicable	Number applicable	Percent applicable	Number knowing practice	Percent applicable	Number knowing practice	Percent applicable
Use lunchbox	Before	90	31	86	96	128	51	95	51	95	74	95	74
leftovers	After	52	17	47	90	104	48	96	48	96	92	96	92
Wrap and put bread	Before	281	98	b/	b/	246	98	b/	98	b/	b/	b/	b/
in refrigerator	After	273	89	b/	b/	216	99	b/	99	b/	b/	b/	b/
Use unserved meat	Before	285	100	276	97	246	98	238	98	238	97	238	97
& fish leftovers	After	300	98	299	100	217	100	217	100	217	100	217	100
Pick bones of	Before	283	99	274	97	248	98	245	98	245	99	245	99
meat and poultry	After	294	96	293	100	218	100	218	100	218	100	218	100
Cook vegetables	Before	286	100	275	96	247	99	240	99	240	97	240	97
with covered pan	After	298	97	289	97	216	99	214	99	214	99	214	99
Insist on	Before	255	89	246	97	246	98	238	98	238	97	238	97
clean plates	After	256	84	256	100	216	99	216	99	216	100	216	100
Boil potatoes	Before	284	99	281	99	237	95	228	95	228	96	228	96
with skin	After	261	85	254	97	212	97	208	97	208	98	208	98

a/ Number applicables refers to the home makers who served or prepared the foods listed and/or engaged in the practice during the month previous to the time of interview. The number of housewives interviewed before and after the Elmira campaign was 286 and 306 respectively; in New Kensington, 250 and 218.

b/ Interview data on knowledge of practice was unreliable because of misinterpretation by interviewers.

Table 4.- Post-campaign respondents hearing of campaign through various informational media

Informational media	Elmira		New Kensington	
	Number	Percent	Number	Percent
	hearing	of total	hearing	of total
	of	hearing of	of	hearing of
	campaign	campaign	campaign	campaign
One or more media	272	100	175	100
Newspaper	237	87	149	85
Radio	231	85	129	74
Clean Plate Club	a	a	88	50
Posters	a	a	75	43
Block leader	99	36	15	9
Neighbor or friend	81	30	52	30
Window display	50	18	45	26
Child at school	29	11	71	41
Home Bureau lesson	29	11	b	b
Demonstration	19	7	20	11
Organization meeting	11	4	37	21
Other media	35	13	b	b

a/ Not asked in Elmira

b/ Not asked in New Kensington

Table 5.- Post-campaign respondents hearing of selected food practices through various informational media in Elmira campaign

Informational media	Food practice			
	Use unserved meat and fish leftovers	Use outer leaves of cabbage	Use poultry bones, skin, and fat for broth	Add baking soda to vegetable cooking water
Number of housewives hearing of practice through at least one medium:	201	174	119	112
				61
Percent of housewives hearing through specified media ^{a/}				
Newspaper	66	58	56	50
Radio	68	56	61	41
Block leader	13	9	7	3
Home Bureau lesson	5	7	6	4
Neighbor or friend	5	5	4	9
Demonstration	3	3	4	4
Child at school	1	2	-	-
Window display	-	-	2	-
Organization meeting	-	-	-	2
Other	25	21	34	22
				20

^{a/} Of the 306 housewives interviewed, those who reported hearing of the practice through informational media used in the campaign, usually heard of it through more than one medium.

Table 6.- Post-campaign respondents hearing of selected food-conservation practices through various informational media in New Kensington campaign

Informational media	Food practice									
	Insist on clean plates	Fats - render and use	Use unserved meat and fish leftovers	Use vegetable cooking water	Use stale bread	Wrap and put bread in refrigerator				
Number of housewives hearing of practice through at least one medium a/:	165	155	142	127	98	69				
Percent of housewives hearing through specified media a/:										
Dispatch	72	71	70	85	74	68				
Radio	68	68	68	96	68	61				
Posters	36	39	33	46	30	17				
Aluminium Workers Journal	27	29	22	39	27	19				
Window display	22	23	19	34	18	9				
Clean Plate Club	50	40	37	34	37	26				
Child at school	40	37	8	33	30	26				
Neighbor or friend	24	25	21	28	28	16				
Civic Organization	17	18	19	21	20	13				
Public Food Demonstration	11	10	9	11	12	6				
Pamphlet	6	8	9	11	9	9				
Block leader	6	5	6	4	7	4				

a/ Of the 218 housewives interviewed, those who reported hearing of the practice through the media used in the campaign usually heard of it through more than one of the media.

FORMS AND PROCEDURE

In both Elmhurst and New Kensington two record forms were used for determining (a) pre-campaign practices and (b) post-campaign practices. In New Kensington another form was used to test the validity of pre-campaign and post-campaign interviews. The four forms used for recording the pre-campaign and post-campaign interviews are consolidated below. The form for testing validity appears in its original form.

I. Record Form used in Pre-Campaign and Post-Campaign Interviews
(Consolidated forms)

A Information concerning changes in food conservation practices was recorded for pre-campaign and post-campaign interviews in Elmira and New Kensington as follows:

Line No.	Commodity	Nature of Practice	App- Practices during last month					Frequency of					Y e s	N o
			licable	Y:N	e:o	s:	Always or all	Often or most	About Half	Seldom or Few	Never or none			
a	b	c:d	e	f	g	h	i	j	k	l				
1.	Beets*	:	Use tops	:	:	:	:	:	:	:				
2.	Cabbage	:	Use outer leaves	:	:	:	:	:	:	:				
3.	Potatoes	:	Boil with skins	:	:	:	:	:	:	:				
4.	Vegetables	:	Use cooking water	:	:	:	:	:	:	:				
5.	Vegetables	:	Use unserved leftovers	:	:	:	:	:	:	:				
6.	Vegetables	:	Cook with cover on pan	:	:	:	:	:	:	:				
7.	Vegetables	:	Add baking soda to water	:	:	:	:	:	:	:				
8.	Citrus fruit	:	Squeeze out all juice	:	:	:	:	:	:	:				
9.	Bread	:	Wrap and put in refrigerator	:	:	:	:	:	:	:				
10.	Bread	:	Scrape and use burned toast	:	:	:	:	:	:	:				
11.	Bread	:	Use stale bread	:	:	:	:	:	:	:				
12.	Milk	:	Use soured milk	:	:	:	:	:	:	:				
13.	Fats	:	Render and use	:	:	:	:	:	:	:				
14.	Meats & fish	:	Use unserved leftovers	:	:	:	:	:	:	:				
15.	Meat & poultry	:	Pick bones	:	:	:	:	:	:	:				
16.	Poultry	:	Use bones, skin, fat for broth	:	:	:	:	:	:	:				
17.	Any foods	:	Use lunchbox leftovers	:	:	:	:	:	:	:				
18.	All foods	:	Insist on clean plates	:	:	:	:	:	:	:				
19.	All foods**	:	Leave portion in company	:	:	:	:	:	:	:				
20.	Cook cabbage: (a) 5 min. or less___: (b) 6-10___: (c) 11-20___: (d) over 20___.													

* Excluded from post-campaign because of seasonal changes.

**** New Kensington only.**

IA. continued

Applicable. Could the practice have been engaged in during the 30 days prior to the interview? For example, if during the last month beets had been served, practice 1 was applicable; 2 was applicable if cabbage had been served; 3 if potatoes had been boiled; 4 if vegetable cooking water had been left-over; 5 if there had been unserved vegetable leftovers; 6 and 7 if vegetables had been cooked; 8 if citrus fruit had been served; 9 if left-over bread could have been put in a refrigerator; 10 if toast had been burned; 11 if there had been stale bread; 12 if there had been sour milk; 13 if there had been leftover fats; 14 if there had been unserved meat and/or fish leftovers; 15 if meat and/or poultry had been served; 16 if poultry had been served; 17 if there had been lunchbox leftovers; and 19 if they had eaten in the presence of guests. Practice 18 was applicable to all families.

Frequency. How often was practice followed during the last 30 days? Entries were made in one of the "frequency" columns (f to j) whenever the practice was applicable (column c checked).

Knowledge. Did the housewife know that the practice would save food and/or that other housewives followed the practice (columns k and l).

B. Information concerning attitudes was recorded as follows:

1. ELMIRA

Do you think that such a campaign has been a good thing for the community? Yes_____No_____Why?_____

Would you like help with any food problems? Yes_____No_____
If "Yes" what are they?_____

2. NEW KENSINGTON

Do you think the campaign has been a good thing for the community?
Yes_____No_____Why?_____

Do you intend to take any nutrition courses or attend any nutrition meetings, as a result of the campaign? Yes_____No_____

C. Post-campaign interview data concerning promotional media were recorded as follows:

1. ELMIRA

Have you heard of the campaign against food waste in which home-makers were asked to be "Kitchen Commandos?" If "Yes", have you heard it through:

Block Leader or MM	Y__N__DK__*	Newspaper	Y__N__DK__
Neighbor or friend	Y__N__DK__	Radio	Y__N__DK__
Window display	Y__N__DK__	Demonstration	Y__N__DK__
Child at school	Y__N__DK__	Org. Meeting	Y__N__DK__
Home Bureau Lesson	Y__N__DK__	Other	Y__N__DK__

Did anyone call at your home with the "Kitchen Commando" pledge? Yes__ No__ Don't Know__

Did you sign the pledge? Yes__ No__ Don't Know__

If "Yes" to above question, did you post the sticker? Yes__ No__ Don't Know__

What newspaper articles concerning the following general topics have you read? (a) Food waste_____
(b) New ways to save and use food:_____

2. NEW KENSINGTON

Have you heard of the campaign against food waste in New Kensington? Yes__ No__ If "Yes" have you heard of it through:

Dispatch	Y__N__DK__	"Fight Food Waste in Home"	Y__N__DK__
Aluminum Workers Journal	Y__N__DK__	Child at school	Y__N__DK__
Posters	Y__N__DK__	"Clean Plate Club"	Y__N__DK__
Radio	Y__N__DK__	Block Leader	Y__N__DK__
Window Display	Y__N__DK__	Civic Organizations	Y__N__DK__
Neighbor or Friend		Public food demonstrations	Y__N__DK__

Did anyone call at your home to leave a "Fight Food Waste in Home" pamphlet? Yes__ No__ Don't Know__

If "Yes" to above question, did you discuss any of the suggestions listed in the pamphlet? Yes__ No__ Don't Know__ Have you used any of the suggestions listed therein? Yes__ No__ Don't Know__

Have you read any of the dispatch articles about using meat leftovers? Yes__ No__ Don't Know__

* Y, Yes, N, No, DK, Don't Know, No Reply, etc.

- E. The following information was obtained in both Elmira and New Kensington before and after the campaigns.

Refrigeration (a) Mechanical___ (b) Icebox___ (c) Other___

Over (a) Yes___ (b) No___

Vegetable Garden (a) Yes___ (b) No___ (If "Yes" what do you do with vegetables not eaten directly from the garden? Can___ Store___ Give away___)

Feed kitchen scraps to animals or chickens (a) Yes___ (b) No___

Number of persons in family in each of the following age groups:
(a) Under 5___ (b) 5-14___ (c) 15-64___ (d) 65 and over___

- F. The following information was obtained only in New Kensington post-campaign interviews:

Are first servings smaller now than 2 months ago? Yes___ No___
If "Yes" to above question, is this a result of the campaign?
Yes___ No___

Have you bought perishables in smaller quantities than 2 months ago? Yes___ No___ Don't Know___ If "Yes", did you do so as a result of the campaign? Yes___ No___ Don't Know___

II. Form for Testing Validity of Interviews

A The following information was obtained from 60 New Kensington housewives.

USE OF COMMODITY DURING LAST WEEK	MEAT-LBS.		VEGETABLES-LBS.		FRUITS-NO.								
	BREAD SLICES	MILK (QUARTS)	FISH	POULTRY	RED MEAT	WHITE POTATOES	CARROTS	BEETS	LETTUCE	OTHER VEGETABLES	APPLES	PEARS	CITRUS FRUITS
1. Served at meals	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:
2. Est. No. Units thrown out - spoil	:	:	:	:	:	:	:	:	:	:	:	:	:
3. Est. No. Units thrown out - leftovers	:	:	:	:	:	:	:	:	:	:	:	:	:
4. Est. No. Units thrown out - other	:	:	:	:	:	:	:	:	:	:	:	:	:
5. Portion left on plate at least once	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:	:X N:	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:	:Y N:
6. % of times tops or outer leaves used	: X :	: X :	: X :	: X :	: X :	: X :	: X :	:	:	:	: X :	: X :	: X :
7. % of times broth saved after boiling or bones saved for stock	: X :	: X :	: X :	:	: X :	: X :	: X :	: X :	: X :	: X :	: X :	: X :	: X :
8. % of times peeled	: X :	: X :	: X :	: X :	: X :	:	:	:	: X :	:	:	:	: X :
scraped	: X :	: X :	: X :	: X :	: X :	:	:	:	: X :	:	:	:	: X :
cleaned	: X :	: X :	: X :	: X :	: X :	:	:	:	: X :	:	:	:	: X :
9. Since last year, discarded: More ____ Less ____ . If M or L, why? ____													
10. Since last year, serve portions: More ____ Less ____ . If M or L, why? ____													
11. No. of persons (a) under 5 ____ (b) 5-14 ____ (c) 15-64 ____ (d) 65 and over ____													
12. Indications of reliability or non-reliability of answers? ____													